

IN THE CLAIMS:

The following is a complete listing of the claims in this application, reflects all changes currently being made to the claims, and replaces all earlier versions and all earlier listings of the claims:

Claims 1 - 30. (Canceled).

Claim 31. (Currently Amended) A method of driving a solid image pickup device comprising a photoelectric conversion unit, a charge-voltage conversion unit for converting electric charges from the photoelectric conversion unit into voltage signals, a signal amplification means for amplifying the voltage signals generated in the charge-voltage conversion unit, ~~[[and]]~~ a charge transfer means for transferring photoelectric charges from the photoelectric conversion unit to the charge-voltage conversion unit, and a selecting means for reading out a signal amplified by said signal amplification means to a signal line, said method comprising ~~the steps of:~~

~~transferring electric charges generated in the photoelectric conversion unit during one accumulation period to the charge-voltage conversion unit by the charge transfer means;~~

~~wherein the transferring step comprises a first transferring step and a second transferring step, a first signal is read out on a basis of electric charges transferred by the first transferring step, the charge-voltage conversion unit is reset after the first signal is read out, and a second signal is read out on a basis of electric charges transferred by the second transferring step~~

after the charge-voltage conversion unit is reset

a first transferring step of transferring the electric charges of the photoelectric conversion unit to the charge-voltage conversion unit;

a first selecting step of reading out a first signal to a signal line by the selecting means;

a reset step of resetting the charge-voltage conversion unit after the first signal is read out;

a second transferring step of transferring the electric charges of the photoelectric conversion unit to the charge-voltage conversion unit;

a second selecting step of reading out a second signal to the signal line by the selecting means; and

an adding step of adding the first signal and the second signal read out to the signal line.

Claim 32. (Previously Presented) The method of driving a solid image pickup device according to claim 31, wherein output signals read out from the charge-voltage conversion unit following the first transferring step and the second transferring step are retained, respectively, and added, and a resulting summed output signal is outputted from a horizontal scan circuit to a common output line.

Claim 33. (Previously Presented) The method of driving a solid image pickup device according to claim 31, wherein after the first transferring step and before the second

transferring step, at least one intermediate readout operation is performed by resetting the charge-voltage conversion unit and reading out an output signal amplified by the amplification means to a signal output line.

Claim 34. (Currently Amended) A solid image pickup device comprising:

a photoelectric conversion unit;

a charge-voltage conversion unit for converting electric charges from the photoelectric conversion unit into voltage signals;

a signal amplification means for amplifying the voltage signals generated in the charge-voltage conversion unit;

a charge transfer means for transferring photoelectric charges from the photoelectric conversion unit to the charge-voltage conversion unit; [[and]]

a selection means for reading out a signal amplified by said signal amplification means to a signal line;

~~a control circuit for controlling the solid state image pickup device to perform a transferring step for transferring electric charges generated in the photoelectric conversion unit during one accumulation period to the charge-voltage conversion unit by the charge transfer means;~~

~~————— wherein the transferring step comprises a first transferring step and a second transferring step, a first signal is read out on a basis of electric charges transferred by the first transferring step, the charge-voltage conversion unit is reset after the first signal is read out, and a~~

~~second signal is read out on a basis of electric charges transferred by the second transferring step after the charge-voltage conversion unit is reset~~

a first transferring means for transferring the electric charges of said photoelectric conversion unit to said charge-voltage conversion unit;

a first selecting means for reading out a first signal to a signal line by said selecting means;

a reset means for resetting the charge-voltage conversion unit after the first signal is read out;

a second transferring means for transferring the electric charges of said photoelectric conversion unit to said charge-voltage conversion unit;

a second selecting means for reading out a second signal to the signal line by said selecting means; and

an adding means for adding the first signal and the second signal read out to the signal line.

Claim 35. (Previously Presented) The solid image pickup device according to claim 34, wherein the photoelectric conversion unit is an embedded-type photodiode.

Claim 36. (Previously Presented) An image pickup system comprising:

a solid image pickup device according to 34;

an optical system for focusing a ray of light to the solid image pickup device;
and
a signal processing circuit for processing output signals from the solid image pickup device.

Claim 37. (Previously Presented) An image pickup system comprising:
a solid image pickup device according to 34;
an optical system for focusing a ray of light to the solid image pickup device;
a mechanical shutter for determining an exposure time of the solid image pickup device; and
a signal processing circuit for processing output signals from the solid image pickup device.